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Letter To The Editor: The Association between Treatment Beliefs and Engagement in Care in First Episode Psychosis

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1. Introduction

Disengagement from mental health services poses an important problem for people with psychosis. Lack of treatment adherence is associated with poorer physical health, reduced social functioning, an increased rate of relapse and an increased likelihood of being legally detained (O'Brien et al., 2009). Previous research has uncovered differences in treatment beliefs based upon either differences in causal attributions (McCabe, 2004) and ethnic/racial group (Jimenez et al., 2012), however the impact of differing treatment beliefs on engagement in care has not been examined. This is an important extension since if it can be evidenced that differing treatment beliefs are associated with variation in engagement, services may seek to realign to account for these differences. We aimed to complete a secondary analysis of a pre-existing cohort to examine; 1) whether different treatment beliefs were associated with engagement in care; 2) the influence of sociodemographic differences on treatment beliefs and whether these differences extended to engagement in care.

2. Methods

This study was part of the NIHR funded U.K. based ENRICH Programme. Methodological specifics have been reported in detail elsewhere (Singh et al., 2013). We used the Beliefs about Treatments for Mental Illness (BATMI) scale to explore patient's beliefs about what is the appropriate treatment for mental illness (Furnham and Wong, 2007). BATMI categorizes treatment beliefs into six categories: biological; psychotherapeutic; community; alternative; religious; and supernatural. SOLES (Singh O'Brien Level of Engagement Scale) was used to measure service user engagement with mental health services (O'Brien et al., 2009). We used both a continuous and a binary measure for SOLES, with the binary measure categorizing participants into either "high engagement" (score ≥5 on SOLES), or low engagement (score <5 on SOLES). Adjustments for potential confounding variables were made in two stages;

age (at assessment; continuous), sex (categorical), and education level (categorical); and then; ethnicity (categorical) and religion (categorical).

Univariable Pearson's correlation analyses were performed on the BATMI categories and SOLES. For the continuous SOLES measure, we then performed linear regression analyses with and without adjustments. For the binary SOLES measure, we used logistic regression, with and without adjustments. Statistical analysis was completed using IBM SPSS Statistics 24.0.

3. Results

Our sample size was n=98; age range 14-37 years. Sample characteristics are described in supplementary data table 1. Demographics were similar between participants, though a difference was noted in educational level ($p=0.01$).

For the continuous SOLES measure, there were positive univariable correlations for biological ($r=0.30$, $p<0.01$), psychological ($r=0.28$, $p<0.01$) and community ($r=0.34$, $p<0.01$) treatment beliefs. For the binary SOLES measure, there were positive univariable correlations for biological ($r=0.30$, $p<0.01$), psychological ($r=0.28$, $p<0.01$) and community ($r=0.31$, $p<0.01$) treatment beliefs. Our multivariable linear regression analyses (table 1) and logistic regression analyses (supplementary data table 2) echoed those associations, before and after adjustments, with little attenuation.

Table 1: Linear Regression Analysis for BATMI categories and SOLES

Predictor	Regression Co-efficient (S.E.) for SOLES						
BATMI categories	Unadjusted Model			Adjusted for age, sex, education		+ ethnicity & religion	
	n	B (S.E.)	p	B (S.E.)	p	B (S.E.)	P
Biological	98	0.31 (0.02)	<0.001*	0.32 (0.03)	0.002*	0.32 (0.05)	0.003*
Alt Med	98	0.12 (0.04)	0.174	0.13 (0.05)	0.174	0.20 (0.05)	0.244
Psychological	98	0.34 (0.03)	<0.001*	0.32 (0.05)	0.001*	0.32 (0.06)	0.008*
Community	98	0.33 (0.04)	<0.001*	0.31 (0.04)	0.008*	0.32 (0.06)	0.004*
Religious	98	0.10 (0.04)	0.364	0.08 (0.07)	0.455	0.14 (0.07)	0.228
Superstitious	98	0.08 (0.02)	0.345	0.10 (0.06)	0.343	0.09 (0.04)	0.156

*indicates $p<0.05$

4. Discussion

We found that biological, psychological and community-based treatment beliefs were significant predictors of engagement. This may echo the bio-psycho-social model of treatment delivery, commonly used in the U.K. Biological treatment beliefs have previously shown to be associated with greater satisfaction and adherence to treatment (Wiesjahn et al., 2014). An important strength of the BATMI measure is that it captures strength of belief, with a higher score relating to a higher strength of belief. We are therefore able, to some extent, to show a 'dose-response' relationship between treatment beliefs and engagement in care. We also found that ethnicity and religion did not alter the associations between treatment beliefs and engagement, and that there were no associations between religious, superstitious or alternative treatment beliefs and engagement. Holding such treatment beliefs has in previous research not reduced confidence in the medical model of treatment received for mental illness (Charles et al., 2007; Conrad et al., 2007). Our limitations include the cross-sectional design of the study, which is inherently susceptible to reverse causality and residual confounding. Additionally, we were unable to include measures such as the adverse effects of medication or availability of healthcare, which have been shown to affect engagement (Dixon et al., 2016).

Overall, our findings suggest that stronger beliefs in the bio-psycho-social model of mental healthcare, which is the generally accepted treatment model in the U.K., is predictive of higher engagement in care. This effect withstood adjustment for multiple possible confounders. Clinicians and other healthcare professionals may be encouraged to place greater emphasis on ensuring adequate explanations, tailored to the individual, of the scientific basis and intended effects behind prescribed treatments, whether biological, psychological or social.

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